DERMATOLOGY PEARLS

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Pearl of the month: Food Allergy update

Food allergy can be challenging to diagnose, and it's sometimes difficult to convince pet owners that the only true diagnosis/treatment is the home cooked or prescription hypoallergenic diet trial. The following recent abstracts including two brand new studies presented at the World Congress of Veterinary Dermatology, illustrate that OTC "novel protein" diets are often contaminated with other proteins not listed on the labels, that food allergy serology results vary on the same sample tested by different labs and is not able to distinguish between normal dogs, atopic dogs and food allergic dogs, and that Royal canin Ultamino hydrolyzed diet shows results that are superior to z/d in chicken allergic dogs, and may show equivalent results to home prepared diets:

J Anim Physiol Anim Nutr (Berl). 2013 May;97 Suppl 1:32-8.
Identification of undeclared sources of animal origin in canine dry foods used in dietary elimination trials.
Ricci R et al.

Background/Objectives: Failure to respond to commercial limited antigen diets can occur in dogs kept on a dietary trial for the diagnosis of adverse food reaction (AFR). The aim of this study was to assess twelve canine dry limited antigen diets (eleven novel protein diets and one hydrolyzed diet) for potential contamination by ingredients of animal origin not mentioned on the label. Each dietary product was analyzed by microscopy analysis with the aim of identifying bone fragments of different zoological classes (mammalian, avian and fish) and by polymerase chain reaction (PCR) for the identification of DNA of animal origin.

Results: Discrepancies between the results obtained by PCR and/or microscopy analysis and the ingredients listed on pet food packages were found. **Only in two pet foods did the results of both analyses match the ingredients listed on the label. In the remaining ten samples, microscopy detected bone fragments from one or two unpredicted zoological classes, revealing avian fragments in six of ten samples, followed by those of fish in five of ten, and mammalian fragments in four of ten**. **Dogs might fail to respond to commercial limited antigen diets because such diets are contaminated with potential allergens**. Before ruling out AFR, a novel protein home-made diet should be considered if the dog is unresponsive to a commercial regimen. The full article can be read online:
http://onlinelibrary.wiley.com/doi/10.1111/jpn.12045/full

Veterinary Dermatology 2014 Oct;25(5):447-e70.
Food-specific serum IgE and IgG reactivity in dogs with and without skin disease: lack of correlation between laboratories.
Hardy JI, Hendricks A, Loeffler A, et al.

Background/Objectives: Despite conflicting data on their utility and no reports on interlaboratory reproducibility, serum food-specific antibodies are commonly assayed in first-opinion canine practice. The goal of this study was to determine both the variability of test results between two laboratories and the frequencies and magnitudes of food reactivity in dogs of different disease status. Sera were obtained from eight dogs with cutaneous adverse food reaction (Group A), 22 with nonfood-induced atopic dermatitis (Group B), 30 with an allergic/inflammatory phenotype (Group C), 12 with miscellaneous skin diseases (Group D) and nine healthy dogs (Group E). Paired sera were submitted to two laboratories (A and B) for assays of food-specific IgE and IgG antibodies.

Results: Numbers of positive IgE and IgG tests determined by each laboratory in Groups A, B, D and E were comparable **(this means that positive results were found in all groups, not just the food allergic dogs**). Agreement between the two laboratories' tests was 'moderate' for one antigen (potato IgE), 'fair' for four (corn IgE, rice IgE and IgG and soya bean IgG), 'slight' for eight (six IgE and two IgG) and 'less than chance' for the remaining six antigens (three IgE and three IgG). **These laboratories' tests appear to have dubious predictive clinical utility because they neither correlate nor distinguish between dogs of different disease status.**

Veterinary Dermatology 2016; 27 (Suppl. 1), 6–121
Diagnostic value of home-cooked and an extensively hydrolyzed diet (Anallergenic, Royal Canin, France) in the diagnosis of canine adverse food reaction: a randomized prospective multicenter study in 72 dogs
MC Cadiergues, A Muller, E Bensignor et al.

Objective: The objective of this prospective multicenter study was to compare the diagnostic value of home cooked diet (HCD) and an extensively-hydrolyzed diet (EHD) for the diagnosis of canine adverse food reaction (AFR). Dogs with suspected AFR entering the study were randomized to be fed either a balanced HCD or EHD. Examinations to evaluate severity of clinical lesions (CADESI) and pruritus scores were recorded at enrollment (day 0) and at days 56, 70 and 154. Seventy two dogs were included.

Results: At day 0, there were no significant differences between groups; 35 dogs were fed the HCD and 34 dogs were fed the EHD. There were no significant differences between groups at any time point regarding CADESI and pruritus scores; 18/34 (52.9%) dogs included in the EHD group and 19/35 (54.3%) included in the HCD group had reduction of pruritus and CADESI scores after 8 weeks. Twelve dogs in EHD group (66.7%) and 12 dogs in HCD group (63.2%) relapsed after the dietary challenge. AFR was diagnosed in 35.3% of the EHD group dogs and in 34.3% of the HCD dogs. Chi-square test did not show any significant difference between groups (P = 0.930). **The results show that EHD may be as reliable as HCD as an elimination diet when screening dogs for suspected AFR.**

Veterinary Dermatology 2016; 27 (Suppl. 1), 6–121
A randomized, double-blinded crossover trial testing the benefit of an extensively hydrolyzed poultry feather veterinary diet in dogs with spontaneous pruritic chicken hypersensitivities
P Bizikova and T. Olivry.

Background/Objective: Hydrolyzed protein diets are used to diagnose and treat dogs with cutaneous adverse food reactions (CAFR). Little is known about what proportion of dogs hypersensitive to the native protein would react to it in its hydrolyzed form. Our goals were to determine the clinical allergenicity of a novel extensively hydrolyzed poultry feather diet (Royal Canin Veterinary Diet Anallergenic/Ultamino Formula dry; RCA) in dogs with proven chicken-induced CAFR. A partially hydrolyzed chicken diet (Hill's Prescription Diet z/d Canine dry; HZD) was used as a control. In this randomized, double-blinded, crossover trial, ten dogs with chicken-induced CAFR were selected after a positive oral challenge to chicken meat and a negative one to corn (*corn allergic dogs were excluded because both Ultamino and z/d contain corn starch, which can cause pruritus flare in 20% of corn allergic dogs*). None of these dogs suffered with gastrointestinal AFR. Test diets were fed for 14 days separated by a 14 day wash out period. Owners rated pruritus daily using a pruritus visual analog scale (PVAS). The challenge was ended if the PVAS reached or exceeded 5/10.

Results: The median PVAS values before feeding RCA and HZD were 0.9 and 1.7, respectively. No dog fed RCA but four dogs fed HZD (40%) were withdrawn after PVAS values increased to 5/10 or above. The maximal PVAS score was significantly higher after HZD compared to RCA. Additionally, one dog in each group was withdrawn due to diarrhea. **The new extensively hydrolyzed poultry feather diet (Ultamino) did not induce pruritus flares in dogs allergic to chicken, in contrast to a partially hydrolyzed chicken diet (z/d) that led to pruritus increases in 40% of these dogs**.